- Send/Receive compliant NITF files using TACO2 point-to-point or via a suite of communication strings.

## *NITFS CTE FACILITY*

The NITFS CTE Facility's capabilities include:

- Modern test laboratories.
- Windows/UNIX workstations with ancillary devices.
- Automated test tools for:
  - Computer Graphics Metafile (CGM)
  - Tactical Communications (TACO2)
  - Compression Algorithm (JPEG, Bi-Level ARIDPCM and VQ)
  - NITF file headers and imagery evaluation
- Ability to perform bit-by-bit analysis of NITF files.
- Capability to fabricate and test interface devices.
- Capability to interface into tactical, strategic, and commercial switching testbeds:
  - C2, Data Switching, Circuit Switching, FDDI, ATM, Analog and Digital Transmission Systems.
  - Wide variety of COMSEC equipment

## *NITFS CERTIFICATION PROGRAM*

Test services are available to both government and commercial concerns. For more information on NITFS compliance testing, scheduling, test documents and certification forms, please contact:

Joint Interoperability Test Command
NITFS Certification Test & Evaluation Facility
ATTN: JTDB
Fort Huachuca, AZ  85613-7020

**NITFS Test Facility:**
Phone: (520) 538-5458
DSN 879-5458
FAX: (520) 538-5257
DSN 879-5257
e-mail: jitcn@fhu.disa.mil

*Revised:   February  2000*

# NATIONAL IMAGERY TRANSMISSION FORMAT STANDARD (NITFS)
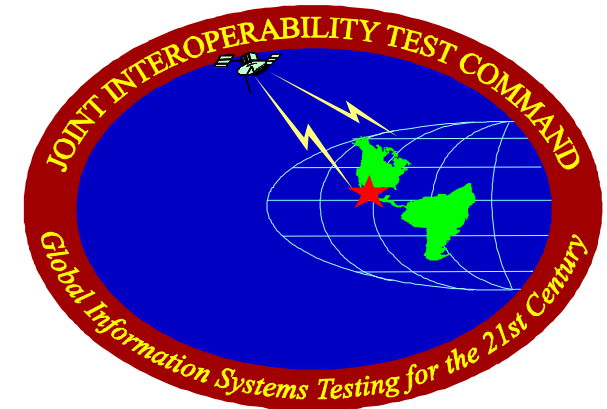
*Joint Interoperability Test Command*

Joint Interoperability Test Command
ATTN:  Visitor Support Center
Building 57305
Fort Huachuca, AZ 85613-7020


1-800-LET-JITC
http://jitc.fhu.disa.mil


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## WHAT IS NITFS?

The National Imagery Transmission Format Standard (NITFS) is the designated standard for formatting and exchanging digital imagery and imagery-related products within the Department of Defense and among members of the Intelligence Community.

## NITFS SUITE OF STANDARDS

| | |
|---|---|
| MIL-HDBK-1300A | NITFS |
| MIL-STD-2500A | NITF Version 2.0 |
| MIL-STD-2500B | NITF Version 2.1 |
| MIL-STD-188-196 | Bi-level Image Compression for the NITFS |
| MIL-STD-188-197A | ARIDPCM Image Compression for the NITFS |
| MIL-STD-188-198A | JPEG Image Compression for the NITFS |
| MIL-STD-188-199 | Vector Quantization Decompression for the NITFS |
| MIL-STD-2301A | CGM Implementation Standard for the NITFS |
| MIL-STD-2045-44500 | TACO2 for the NITFS |
| MIL-STD-6040 | US Message Text Format |

## NITF BACKGROUND

The National Imagery Transmission Format Standard (NITFS) is the collaborative result of a US Government and Industry effort to provide a common facility for exchanging imagery, imagery derived information, and associated geospatial metadata. The purpose of the NITFS is to provide a common standard for the exchange and storage of files composed of images, symbols, text, and associated data.

Technical review, community coordination, and over-all planning of the NITFS have been accomplished through the NITFS Technical Board (NTB) and its ad-hoc working groups, the Format Working Group (FWG), Bandwidth Compression Working Group (BWCWG), and Communications Working Group (CWG). The NTB has evolved over the years into a true consensus-based forum emphasizing cooperation and partnership between government and industry. The NTB operates under the joint authority of the Imagery & Geospatial Standards Management Committee (ISMC/GSMC), which is responsible for the selection and management of imagery and geospatial standards for the DoD, Intelligence Community and the overall USIGS community.

NITF Version 1.1 was approved for general implementation in 1990. Compliance tests were conducted on 142 system configurations representing 30 separately named products built by 24 developers. NITF version 2.0 began fielding in 1994. Over 160 compliance tests have been conducted to date. NITF version 2.1 became available for implementation in October 1998. Among other features, NITF 2.1 addresses Year 2000 compliance, updated security features, improved geospatial support, multi-spectral, and complex data formats.

The NITF has now been established as an International Standard, (ISO/IEC 12087-5), Basic Image Interchange Format (BIIF). Implementation profiles of BIIF are being established for the US DoD, USGS, NATO (STANAG 4545) and for nations participating in the "open skies" treaty.

## NITFS CHARACTERISTICS, FEATURES, AND CAPABILITIES

Provides universal features and functions without requiring commonality of hardware or proprietary software.

- Sync and Async communication support capability.
- Multi-levels of implementation capability.
- Variable image sizes and resolution.
- Nondestructive image insets/overlays.
- Image compression using international standards.
- Nondestructive symbol and textual annotation of imagery.
- ISO/IEC CGM graphics.
- Text files to convey information about the image.
- Extended imagery support and archive data.
- Capability to uniquely classify each element within a file.
- ISO/IEC JPEG Compression.

## NITFS CERTIFICATION PROGRAM

The NIMA oversees the NITFS Certification Program to verify NITFS compliance. Compliance certification is accomplished through a series of tests that verify a digital imagery system's ability to pack imagery, graphics, text, and associated data in the NITF file format; exchange NITF files using TACO2; and interpret/display/unpack NITF formatted imagery, graphics, text, and associated data. The JITC has established the NITFS Certification Test and Evaluation (CTE) Facility to support the certification program and to perform other NITFS related testing services. Detailed information is contained in Nima N-0105/98, NITFS Standards Compliance and Interoperability Test and Evaluation Program Plan.

## NITFS CERTIFICATION CRITERIA

Digital imagery systems will be tested and certified as compliant with the implementation requirements of the NITFS. The test criteria are specified in the Nima N-0105/98, NITFS Standards Complince and Interoperability Test and Evaluation Program Plan.

- Monochrome and/or color imagery ranging from 8x8 to 64Kx64K pixels; 1, 8 to 16, 24, 32, and 64 bits per pixel.
- Compress imagery using JPEG and Bi-Level compression, and VQ (decompression only).
- Generate/Interpret/Display symbol and textual annotations.
- Prepare/Access text files associated with the imagery.
- Generate/Interpret extended imagery support data.